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10/532,105	10/12/2005	Samuel Boutin	271243US2XPCT	9055

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EXAMINER	
DOAN, NGHIA M	

ART UNIT	PAPER NUMBER
2825	

NOTIFICATION DATE	DELIVERY MODE
01/03/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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TH

Office Action Summary	Application No.	Applicant(s)	
	10/532,105	BOUTIN ET AL.	
	Examiner	Art Unit	
	Nghia M. Doan	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/12/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is response to the application 10/532,105 filed on 04/21/2005. Claims 31-60 are pending in this office action.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent France Application No. 02/13112, filed on 10/21/2002.

Drawings

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings description are not written in English and are not readable. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: this application claimed on the foreign priority. Hence, the application disclosure should include the foreign priority information at the first paragraph.

Appropriate correction is required.

Claim Objections

5. Claims 31 and 41 are objected to because of the following informalities: line 1, after "synthesizing" inserts "harness wiring for". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 31-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. As per claims 31 and 41, recited "an evaluation of the routing", which need to be clarified what condition (function or constraint) involved in the step evaluation?

9. As per claims 32-40 and 42-60 also rejected under 35 U.S.C. 112, second paragraph because are depending indirectly or directly from claim 31 and 41.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 31-32, 34-36, 38, 41-58, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Oota et al., (US Pat. 5,740,341) (see entire document).

12. With respect to claims 31, 41, and 60, Oota discloses a method for designing and supporting system for component arrangement and routing ('341, the abstract), the method comprising:

representing a geometry of the product ('341, fig. 6), divided into different zones ('341, fig. 6, process [2] [- [5], col. 27, ll. 17-35), in two dimensions (three-dimensional space (as a pipe routing) means for mapping two-dimensional (system line routing) logical connection information) ('341, fig. 6, process [1] and [6] – [8], the abstract, col. 5, ll. 25-32 and col. 6, ll. 45-49);

mapping routing points (starting point and ending point) for routing of electrical wires into the different zones ('341, fig. 6, fig. 7 (2), col. 22, line 32 - col. 23, line 20);

mapping connecting points between the different zones ('341, fig. 7(1) as P1, P2, P3, and P4 and fig. 7(2), col. 12, line 63 - col. 13, line 34, col. 22, line 32 - col. 23, line 20);

mapping electrical and electronic components into the different zones (the component arranged on the assigned plane of the arrangement space)('341, the abstract, fig. 6, fig. 7(2), fig. 19, box [101], col. 12, line 43 - col. 13, line 15, col. 22, line 32 - col. 23, line 20);

undertaking a routing synthesis (routing generation) as a function of the geometry of the different zones (group cell) and of the positions of the routing points (position information), of the connecting points (point cell), and of the components (attribute information) ('341, fig. 7(2), fig. 13(3), col. 6, line 36—col. 7, line 15, col. 16, line 14 - col. 17, line 38);

undertaking an evaluation of the routing (which routes have a shortest line or constraint condition) ('341, the abstract, col. 3, ll. 19-23, col. 21, ll. 32-67, col. 27, ll. 9-20); and

depending on a result of the evaluation, modifying sites of the routing points, of the connecting points, and/or of the electrical and electronic components, and repeating the routing synthesis and evaluation ('341, col. 13, ll. 39-50, col. 27, line 55 – col. 30 line 59).

13. With respect to claim 32, Oota discloses wherein at least one connecting point corresponds, in the product, to one connector and/or at least one routing point corresponds, in the product, to one connector (fig. 23(1) and fig. 23(2), col. 27, line 4 – col. 28, line 7).

14. With respect to claim 34, Oota discloses wherein, before undertaking the routing synthesis, characteristics are specified for the electrical and electronic components ('341, col. 19, ll. 12-45 and col. 20, ll. 32-56).

15. With respect to claim 35, Oota discloses wherein, after synthesis of the routing, cabling composed of the synthesized routing and of connectors is visually displayed ('341, col. 20, ll. 3-30).

16. With respect to claim 36, Oota discloses validating one routing among those evaluated, and calculating a technical specification for cabling composed of the validated synthesized routing and of connectors, and calculating a cabling cost and/or calculating a measure of quality ('341, fig. 28, fig. 29, box [2247], col. 32, ll. 17-58).

17. With respect to claims 38 and 48, Oota discloses wherein, for each electronic component, data pins associated with drivers and data, power pins corresponding to a supply, and ground pins are specified, and routing of data wires originating from data pins to the electronic components are automatically synthesized ('341, fig. 23(1), fig. 23(2), and fig. 28, col. 7, ll. 37-46, col. 10, line 26 – col. 11, line 26).

18. With respect to claim 42, Oota discloses wherein the two-dimensional representation of the zones onto which the components are mapped comprises a global view of all of the zones and means for adding or removing zones (col. 22, line 32 – col. 23, ll. 20 and col. 26, line 50 – col. 27, line 55).

19. With respect to claim 43, Oota discloses wherein, when a zone is selected in the global view of all zones, a local view of the zone appears, in which local view geometric characteristics of the zone can be specified ('341, col. 21, ll. 30-62).

20. With respect to claim 44, Oota discloses wherein the local view of a zone is edited by clicking and dragging, by an icon of a tool, routing points, connecting points, prohibited subzones, and/or ground points ('341, fig. 24, fig. 29, fig. 31, col. 12, ll. 43-49 and col. 13, ll. 35-44).

21. With respect to claim 45, Oota discloses wherein a routing point or a connecting point between zones can be transformed to a connector by clicking on an attribute of the routing or connecting point ('341, fig. 7(2), fig. 11(2), fig. 21, col. 12, ll. 43-61).

22. With respect to claim 46, Oota discloses wherein siting of different electronic components is specified by clicking and dragging a representation of the components in a hierarchical list ('341, fig. 24, fig. 29, fig. 31, col. 12, ll. 43-49 and col. 13, ll. 35-44).

23. With respect to claim 47, Oota discloses wherein the routing of different electronic components is automatically synthesized ('341, col. 20, ll. 31-56).

24. With respect to claim 49, Oota discloses wherein, if an electronic component is connected to a calculator in a system architecture design tool, then, during synthesis of the routing, data pins of the electronic component are connected to the calculator ('341, fig. 22, fig. 23, fig. 28, and fig. 29, col. 16, line 35 - col. 17, line 38).

25. With respect to claim 50, Oota discloses wherein a cost of an electrical and electronic architecture is calculated automatically as a function of at least one function or evaluation (constraint condition) ('341, col. 26, ll. 18-30, col. 27, ll. 4-20, and ll. 55-67).

26. With respect to claim 51, Oota discloses wherein the function or evaluation comprises: a cost function of the connectors, based on a nomogram that shows an estimate of the price of the connectors as a function of a number of data, power, and ground connections, or based on a mean price assigned to each connection of a data, current, or ground wire; an evaluation of the cost of the electronic components; or a function of the cost of the wires based on their length and type, or taking a mean , linear weight for power and ground wires, a mean linear weight for data wires, and a cost per unit mass of the component in which the wires are manufactured (fig. 23(1), fig. 23(2), fig. 24, fig. 30(3), and fig. 31 see the descriptions).

27. With respect to claim 52, Oota discloses wherein, given a mean cost for software and hardware drivers of different drivers and given a cost of implementation of an elementary operation, a cost of an electronic component of a complete electrical and

electronic architecture is automatically estimated ('341, col. 26, ll. 18-30, col. 27, ll. 4-20, and ll. 55-67, col. 35, ll. 45-50).

28. With respect to claim 53, Oota discloses wherein, given a synthesized routing and measures of quality for the connectors and portions of wire of different zones, a measure of quality of an electrical and electronic architecture is automatically estimated ('341, fig. 22, fig. 23, fig. 28, and fig. 29, col. 16, line 35 - col. 17, line 38).

29. With respect to claim 54, Oota discloses wherein, given a measure of quality of the different electronic components mapped into the different zones, the quality of an electrical and electronic architecture is automatically estimated ('341, col. 22, line 41- col. 23, line 20).

30. With respect to claim 55, Oota discloses wherein given a measure of quality for each type of inputs/outputs and for each type of wire, and given a measure of quality for execution of an instruction on a calculator, for access to random-access memory and for access to flash memory, a measure of quality for execution of an elementary operation and for execution of a set of elementary operations on a calculator is automatically calculated ('341, col. 5, ll. 15-60, col. 16, ll. 15-55).

31. With respect to claim 56, Oota discloses wherein, in each zone, routing points that are candidates for grouping power and ground wires into splices are automatically determined, and that which minimizes the wire length in the zone is automatically chosen ('341, the abstract, col. 3, ll. 19-23, col. 21, ll. 32-67, col. 27, ll. 9-20).

32. With respect to claim 57, Oota discloses wherein the splices are taken into account in cost and quality evaluations ('341, col. 26, ll. 18-30, col. 27, ll. 4-20, and ll. 55-67, col. 35, ll. 45-50).

33. With respect to claim 58, Oota discloses providing a system representation tool, the system comprising: electronic components, each connected to at least one bus, and the tool representing, for each bus, components that are connected directly to the bus and, for components directly connected to at least two buses, for each of the at least two buses, associated with the component, an identifier of each other bus to which the component is directly connected ('341, fig. 31, see the descriptions).

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35. Claims 33 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oota et al., (US Pat. 5,740,341) in view of Ozaki (US Pat. 7,200,537) (see entire document)

36. With respect to claim 33, Oota teaches the component or equipment to be installed in the component arrangement processing at different spaces (locations or zones), but Oota does not implicitly teach the particular what is/are electrical and electronic components, which recited in claim 33 and different zones recited in claim 37.

Ozaki teaches a method and program supporting wire harness design for a vehicle, which transform a three-dimensional data ('537, fig. 3, fig. 4, and fig. 21) of a wire harness into two-dimensional drawing ('537, fig. 5 and fig. 22), which includes different zone, (claim 37) such as the different zones of the vehicle contain at least one of the following zones: a zone of a front face, a zone of a hood, a zone of an instrument panel, a zone of a roof, a zone of a trunk and tailgate, above and below the foregoing zones, a zone of a right front fender and of a left front fender, a zone of a right front door and of a left front door, a zone of a right column and of a left column, a zone of a right rear door and of a left rear door, a zone of a right rear fender and of a left rear fender, between the zone of the instrument panel and those of the right front fender and of the left front fender, the zones of the right front column and of the left front column, between the zone of the trunk and those of the right rear fender and of the left rear fender, the zones of the right rear column and of the left rear column, a zone above a floorboard, and a zone below the floorboard (claim 33) electrical and electronic components, at least one of following choices is made: choice of electronic control units, choice of communication networks, choice of sensors and actuators, choice of fuse and relay boxes, choice of an electrical and electronic architecture ('537, fig. 21).

It would have been obvious to one of ordinary skill in the art to combine Oota and Ozaki to implement supporting wire harness design that can be applied in the piping routing and vehicle harness wiring which can be transformed from three-dimensional into two dimensional developed and manufactured to a vehicle or (pipe of building) that more easier attached and installation ('537, col. 1, ll. 40-56)

Allowable Subject Matter

37. Claims 39-40 and 59 are objected to as being dependent upon a rejected base claim, but would be allowable if claim 39 or 59 is rewritten in independent form including all of the limitations of the base claim and any intervening claims.

38. The following is a statement of reasons for the indication of allowable subject matter: because the prior art made of record does not teach or suggest the limitation recited in claim 39 or 59, in combination with other limitation recited in the based claims.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghia M. Doan whose telephone number is 571-272-5973. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nghia M. Doan
/NMD/

JACK CHIANG
SUPERVISORY PATENT EXAMINER